



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/512,032	02/24/2000	Akira Egawa	35.C14311	5722

5514 7590 02/25/2005

FITZPATRICK CELLA HARPER & SCINTO  
30 ROCKEFELLER PLAZA  
NEW YORK, NY 10112

EXAMINER
----------

YODER III, CHRISS S

ART UNIT	PAPER NUMBER
----------	--------------

2612

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/512,032

Applicant(s)

EGAWA, AKIRA

Examiner

Chriss S. Yoder, III

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 2612

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed October 22, 2004 have been fully considered but they are not persuasive.

Applicant argues that Egawa (US Patent # 5,808,726) fails to transfer sequentially therein the ON-state and the OFF-state signals to the second transfer unit. However, the examiner disagrees pointing out that the signals are transferred sequentially from the first transfer unit to the second (the first transfer unit being 94 and the second transfer unit being 96). As can be seen in Figure 7, the first OFF signal is transferred from transfer unit, 94, to second transfer unit, 96, during the first pulse in SH, and the ON signal is transferred from transfer unit, 94, to second transfer unit, 96, during the second pulse in SH. Therefore, as claimed, the Egawa reference meets this claim limitation of sequentially transferring the ON-state and the OFF-state signals to the second transfer unit.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Egawa et al. (US Patent # 5,808,726).

Art Unit: 2612

2. In regard to claim 1, note Egawa discloses the use of a sensor array for receiving reflected light (figure 6: 91), a first transfer unit arranged to transfer signals from the (figure 6: 94), a second ring-shaped transfer unit arranged to integrate the signal from the first transfer means (column 4, line 13-15; and figure 6: 96), the first transfer unit transfers sequentially signals from the sensor array in light projection ON and OFF states to the second transfer unit at different timings respectively (figure 7; each pulse of SH transfers the charge from the first to the second transfer unit; i.e. the first OFF signal is transferred from transfer unit, 94, to second transfer unit, 96, during the first pulse in SH, and the ON signal is transferred from transfer unit, 94, to second transfer unit, 96, during the second pulse in SH), and a transfer frequency of the second transfer means is higher than that of the first transfer means (figure 7, SH has a higher frequency than ST).

3. In regard to claim 2, note Egawa discloses that each timing of the first transfer unit has a phase different from that of the second transfer means (figure 7, SH has a different phase than ST).

4. In regard to claim 3, note Egawa discloses that the second transfer unit comprises a skimming unit arranged to determine skimming on the basis of the second signal and a pixel for which skimming is determined skimming by a combination of light projection ON and OFF states (column 3, lines 29-36).

5. In regard to claim 4, note Egawa discloses that the first and second signals are transferred alternately (figure 7; using the timing diagram we can see that the signals are transferred while the IRED/projection signal is alternated) and a light projection OFF

Art Unit: 2612

pixel goes ahead of the light projection ON signal (figure 7; the first signal that is transferred is an OFF signal, which is output with the first clock cycle of SH).

6. In regard to claim 5, note Egawa discloses that integration starts from the first signal (column 3, lines 19-25; figure 7: CK1, the integration is driven by the clock pulses in the ring shaped transfer unit and starts from the first signal).

7. In regard to claim 6, note Egawa discloses that the light projection repeatedly alternates the ON and OFF states (figure 7: IRED).

8. In regard to claim 7, note Egawa discloses that skimming is inhibited when a light projection OFF signal goes ahead of a light projection ON signal in integration of the signal in the second transfer unit (column 3, lines 20-36).

9. In regard to claim 8, note Egawa discloses the use of a light projection unit arranged to project light to an object (figure 9: 415), a plurality of sensor arrays for receiving reflected light (column 6, lines 35-39; and figure 9: 410 and 411), a plurality of first transfer units arranged to transfer signals from said plurality of sensor arrays (figure 6: 91 and 94; the signals from the sensor array, 91, are transferred to the first transfer units, 94), a plurality of second transfer units arranged to integrate the signals from the plurality of first transfer units (figure 6: 94 and 96; the signals from the first transfer units, 96, are transferred to the second transfer units, 96), the first transfer unit transfers sequentially signals from the sensor array in light projection ON and OFF states to the second transfer unit at different timings respectively (figure 7; each pulse of SH transfers the charge from the first to the second transfer unit; i.e. the first OFF signal is transferred from transfer unit, 94, to second transfer unit, 96, during the first pulse in

Art Unit: 2612

SH, and the ON signal is transferred from transfer unit, 94, to second transfer unit, 96, during the second pulse in SH), a transfer frequency of the second transfer unit is higher than that of the first transfer unit (figure 7, SH has a higher frequency than ST), and a distance measuring unit arranged to measure a distance using a difference signal between the first signal and the second signal from the second transfer unit (column 6, line 65 –column 7, line 2).

10. In regard to claim 9, note Egawa discloses that each timing of the first transfer unit has a phase different from that of the second transfer means (figure 7, SH has a different phase than ST).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chriss S. Yoder, III whose telephone number is (703) 305-0344 or (571) 272-7323. The examiner can normally be reached on M-F: 8 - 4:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2612

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CSY

February 14, 2005

  
WENDY R. GARBER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600